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Byung Cheon Lee

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EXAMINER

LEE, ANDREW CHUNG CHEUNG

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 10/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/020,872

Applicant(s)

CHEON LEE, BYUNG

Examiner

Andrew C. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 – 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi (U.S. 6747974 B1) in view of Chiussi et al. (U.S. 5689506).

Regarding claims 1, 19, Hayashi discloses the limitation of an AAL2 switch for communication system ("cell switching system " as switch for communication system; Fig. 1, the element 10, column 2, line 18), comprising: a plurality of receiver circuits each receiving and demultiplexing an AAL2 packet for converting into at least one CPS packet ("a plurality of input ATM processing circuits" as a plurality of receiver circuits; column 2, lines 19 – 23; lines 30 – 34; lines 49 – 62); a plurality of memories that store said at least one CPS packet ("cell buffers" as a plurality of memories; column 2, line 34; Fig. 4, element 401; column 5, lines 61 – 62); and a plurality of transmitter circuits each coupled to the plurality of memories that search the plurality of memories, convert the searched CPS packet into an AAL2 packet by multiplexing, and transmit the AAL2 packet ("a plurality of output ATM processing circuits" as a plurality of transmitter circuits; column 2, lines 22 – 23; Fig. 8, elements 10- 1,,,10-M; column 9, lines 6 – 27; lines 43 – 51).

Hayashi does not disclose explicitly an AAL2 switch for multicast wherein at least one memory stores an indication that said at least one CPS packet is to be multicast through two or more transmitter circuits. Chiussi et al. disclose the limitation of an AAL2 switch for multicast wherein at least one memory stores an indication that said at least one CPS packet is to be multicast through two or more transmitter circuits ("the output port bitmap field provides a map from the input ports through the interconnecting switch unit", and "the delivery of the multicast cells occurs through a virtual connection (VC) established between input port and the requested output ports" as switch for multicast wherein at least one memory stores an indication that said at least one CPS packet is to be multicast through two or more transmitter circuits; Fig. 9, column 7, lines 34 – 36; column 8, lines 45 – 61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hayashi to include an AAL2 switch for multicast wherein at least one memory stores an indication that said at least one CPS packet is to be multicast through two or more transmitter circuits such as that taught by Chiussi et al. in order to provide an apparatus for and a method of multicasting an ingress cell received at one of a plurality of input ports connectable through a multistage network to one or more of a plurality of output ports (as suggested by Chiussi et al., see column 1, lines 46 – 49).

Regarding claim 2, Hayashi discloses the limitation of the AAL2 switch of claimed comprising: a first table coupled to each of the plurality of receiver circuits, for managing VPVC, CID and routing information ("the header converting table" element 403 as a first table coupled to each of the plurality of receiver circuits; column 6, lines 37 – 54); and a

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second table coupled to each of the plurality of transmitter circuits, for managing storing conversion in formation including the VPVC and the CID ("the header converting table" element 454; Fig. 8, column 9, lines 14 – 17; lines 43 – 51). Chiussi et al. also disclose the limitation of switch of claimed comprising: a first table coupled to each of the plurality of receiver circuits, for managing VPVC, CID and routing information ("the look up tables LUT1 and LUT2 of Fig. 8" LUT1 as a first table coupled to each of the plurality of receiver circuits; column 7, lines 7 – 12); and a second table coupled to each of the plurality of transmitter circuits, for managing storing conversion in formation including the VPVC and the CID ("the look up tables LUT1 and LUT2 of Fig. 8" LUT2 as a second table coupled to each of the plurality of transmitter circuits; column 7, lines 19 – 36). However, Hayashi do not disclose explicitly the limitation of the AAL2 switch for multicast. Chiussi et al. disclose the limitation of AAL2 switch for multicast ("the switch system establishes a multicast virtual connection identifier" as the AAL2 switch for multicast; column 5, lines 27 – 29). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hayashi to include an AAL2 switch for multicast such as that taught by Chiussi et al. in order to provide n apparatus for and a method of multicasting an ingress cell received at one of a plurality of input ports connectable through a multistage network to one or more of a plurality of output ports (as suggested by Chuissi et al., see column 1, lines 46 – 49).

Regarding claims 3, 20, 21, Hayashi discloses the limitation of the AAL2 switch for multicast of claimed wherein a new VPVC and a routing information for the transmitted AAL 2 packet are allocated based on a VPVC and a CID in the received AAL2 packet

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(column 3, lines 1 – 18). However, Hayashi does not disclose explicitly the limitation of the switch for multicast. Chiussi et al. disclose the limitation of switch for multicast (“the switch system establishes a multicast virtual connection identifier” as the switch for multicast; column 5, lines 27 – 29). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hayashi to include an AAL2 switch for multicast such as that taught by Chiussi et al. in order to provide an apparatus for and a method of multicasting an ingress cell received at one of a plurality of input ports connectable through a multistage network to one or more of a plurality of output ports (as suggested by Chiussi et al., see column 1, lines 46 – 49).

Regarding claim 4, Hayashi discloses the limitation of the AAL2 switch for multicast of claim 3, wherein said at least one CPS packet and a new VPVC are stored according to the routing information (column 3, lines 1 – 11).

Regarding claim 5, Hayashi discloses the limitation of the AAL2 switch for multicast of claim 1, wherein each of the memories is divided into storage areas each corresponding one of a plurality of output ports (“number of destinations refers to the number of output ports” as each of the memories is divided into storage areas each corresponding one of a plurality of output ports; column 15, lines 13 – 19).

Regarding claim 6, Hayashi discloses the limitation of the AAL2 switch for multicast of claim 5, wherein each of the storing areas includes a memory status field, a copy port field, and a port area (column 15, lines 20 – 33).

Regarding claim 7, Hayashi discloses the limitation of the AAL2 switch for multicast of claim 6, wherein the port area is included equal in number to the plurality of output ports (column 15, line 13 –16).

Regarding claim 8, Hayashi discloses the limitation of the AAL2 switch for multicast of claim 6, wherein the memory status field can discriminate whether the CPS packet is stored (column 15, lines 27 – 33).

Regarding claim 9, Hayashi discloses the limitation of the AAL2 switch for multicast of claim 6, wherein the copy port field can discriminate an output port to which said at least one CPS packet is designated (column 15, lines 1 – 16).

Regarding claim 10, Hayashi discloses the limitation of the AAL2 switch for multicast of claim 1, wherein the transmitter circuits each performs the searching process according to values set in a memory status field in the plurality of memories (column 9, lines 28 – 36, 43 - 51).

Regarding claim 11, Hayashi discloses the limitation of the AAL2 switch for multicast of claim 10, wherein the transmitter circuits perform the searching process according to values set at a copy port field (column 8, lines 24 – 29; column 9, lines 6 – 11).

Regarding claim 12, Hayashi discloses the limitation of the AAL2 switch for multicast of claim 1, wherein when said at least one CPS packet is searched, the transmitter circuits generate a new CID for the searched CPS packet by using a new VPVC ("allow the CID value of the CPS packets to be converted" as at least one CPS

packet is searched, the transmitter circuits generate a new CID for the searched CPS packet by using a new VPVC; Fig.8, column 9, lines 43 – 51).

Regarding claim 13, Hayashi discloses the limitation of a switching method of an AAL2 switch for a communication system ((“ATM switching system that performs both the switching processing in the AAL2 layer and in the ATM layer” as switching method for an AAL2 switch for communication system; Fig. 1, the element 10, column 5, lines 26 – 28), the method comprising: converting a received AAL2 packet into a CPS packet by demultiplexing the received AAL2 packet (“a plurality of input ATM processing circuits” as a plurality of receiver circuits; column 2, lines 19 – 23; lines 30 – 34; lines 49 – 62); generating a new VPVC and routing information based on VPVC and CID in the received AAL2 packet (“header conversion” as generating a new VPVC and routing information; column 6, lines 29 – 36; lines 50 – 54); storing the CPS packet and the new VPVC according to the routing information in at least one of a plurality of storage areas in a memory (“cell buffers” as a plurality of memories; column 2, line 34; Fig. 4, element 401; column 5, lines 61 – 62); extracting the CPS packet by searching the plurality of storage areas; and transmitting an AAL2 packet by converting the extracted CPS packet into an AAL2 packet and transmitting the AAL2 packet (column 7, lines 56 – 65; column 8, lines 1 – 10; column 9, lines 52 – 56). Hayashi does not disclose explicitly an AAL2 switch for multicast in a mobile communication system, wherein at least one memory stores an indication that said at least one CPS packet is to be multicast through two or more transmitter circuits, and wherein a subset of transmitter circuits transmit said AAL2 packet for multicast response to said indication, and wherein said received AAL2 packet is

received by a single receiver circuit. Chiussi et al. disclose the limitation of an ATM switch for multicast in a mobile communication system ("the switch system establishes a multicast virtual connection identifier" as the switch for multicast; column 5, lines 27 – 29), wherein at least one memory stores an indication that said at least one CPS packet is to be multicast through two or more transmitter circuits ("the output port bitmap field provides a map from the input ports through the interconnecting switch unit", and " the delivery of the multicast cells occurs through a virtual connection (VC) established between input port and the requested output ports" as switch for multicast wherein at least one memory stores an indication that said at least one CPS packet is to be multicast through two or more transmitter circuits; Fig. 9, column 7, lines 34 – 36; column 8, lines 45 – 61), and wherein a subset of transmitter circuits transmit said AAL2 packet for multicast response to said indication("input port associated with a multicast connection request for delivery to output ports" as a subset of transmitter circuits transmit said AAL2 packet for multicast response to said indication; column 8, lines 48 – 54), and wherein said received AAL2 packet is received by a single receiver circuit ("a cell arriving at input port" as said received AAL2 packet is received by a single receiver circuit; column 8, lines 48 – 49). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hayashi to include an AAL2 switch for multicast in a mobile communication system, wherein at least one memory stores an indication that said at least one CPS packet is to be multicast through two or more transmitter circuits, and wherein a subset of transmitter circuits transmit said AAL2 packet for multicast response to said indication, and wherein said received AAL2 packet is

received by a single receiver circuit such as that taught by Chiussi et al. in order to provide an apparatus for and a method of multicasting an ingress cell received at one of a plurality of input ports connectable through a multistage network to one or more of a plurality of output ports (as suggested by Chuiissi et al., see column 1, lines 46 – 49).

Regarding claim 14, Hayashi discloses the limitation of the switching method of claim 13, wherein the converting through transmitting steps are repeatedly performed whenever the received AAL2 packet is inputted (column 2, lines 56 – 62).

Regarding claim 15, Hayashi discloses the limitation of the switching method of claim 13, wherein a memory status field of the storage area indicates whether the CPS packet is stored (column 6, lines 29 – 36; lines 50 – 54).

Regarding claim 16, Hayashi discloses the limitation of the switching method of claim 13, an output port where the CPS packet is sent is indicated in a copy port field of the storage area (column 15, lines 13 – 19).

Regarding claim 17, Hayashi discloses the limitation of the switching method of claim 13, wherein the CPS packet and the new VPVC information is stored in at least a port area of the storage area (column 15, lines 13 – 26).

Regarding claim 18, Hayashi discloses the limitation of the switching method of claim 13, wherein if the CPS packet is extracted, a new CID is generated by using a new VPVC (column 6, lines 50 – 54; column 9, lines 43 – 51).

Regarding claim 22, Hayashi discloses the limitation of the switching method of claim 19, further comprising periodically searching for a memory status field and a copy port field corresponding to each of a plurality of output ports (column 15, lines 1 – 19).

Regarding claim 23, Hayashi discloses the limitation of the switching method of claim 22, wherein the converting the stored CPS packet into the AAL packet extracts the corresponding to an output port where the CPS packet is allocated by the periodically searching (column 9, lines 32 – 36; lines 43 – 56).

Response to Arguments

3. Applicant's arguments with respect to claims 1 – 23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Almalki U.S. Patent Number 116658 B1 discloses the limitation of an apparatus having an ATM switch core, wherein the ATM switch core has an input coupled to an ingress AAL2 switch engine and an output coupled to an egress AAL2 switch engine. The ingress AAL2 switch engine has a first look-up table that can store: 1) an identification label for an AAL2 virtual channel through said ATM switch core; and, 2) an AAL2 egress connection identification label for an ingress AAL2 packet to be carried by the AAL2 virtual channel. The egress

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AAL2 switch engine has a second look-up table that can store an egress CID and egress VPI/VCID for the AAL2 egress connection identification label.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Lee whose telephone number is (571) 272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ACL

Oct 25, 2006


RICKY Q. NGO
SUPERVISORY PATENT EXAMINER